#8

SEQUENCE LISTING

<110> Quint, Wilhelmus
Van Doorn, Leendert

<120> PROBES, METHODS AND KITS FOR DETECTION AND TYPING OF HELICOBACTER PYLORI NUCLEIC ACIDS IN BIOLOGICAL SAMPLES

<130> INNOG2.001C1

<140> 10/035,978
<141> 2001-12-21

<150> 09/284,725
<151> 1999-04-16

<150> EP 97870133.2
<151> 1997-09-09

<150> EP 96870131.8
<151> 1996-10-16

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<400> 34
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<210> 36
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<220>
<223> HpdiaS2 vacA-derived probe

<400> 36
catgccgcct ttttcacrac cgt 23

<210> 37
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<223> HpdiaS3 vacA-derived probe

<400> 37
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<210> 38
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<223> HpdiaS4 vacA-derived probe

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<400> 39
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cgctgtagga acggtctcag ggcttcttag ttggggacta aaacaagccg aagaagccaa 180
taaa 184

<210> 41
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<220>
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<221> misc_feature
<222> 10, 30, 37, 58, 85, 112
<223> n = A,T,C or G

<221> misc_feature
<222> 10, 30, 37, 58, 85, 112
<223> n = A,T,C or G

<400> 41

tcgccctctn gtttctctcg ctttagtagn agcattngtc agcatcacac cgcaacanag 60
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caccgctgta ggaacggtct cagggcttct tagttgggga ctaaaacaag ccgaagaagc 180
caataaaacc ccagataaa 199

<210> 42
<211> 227
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aggcactgct gtaggaacgg tctcagggct tcttagttgg ggrctcaaac aagccgaaga 180
agcsaataaa accccrgata aacccgataa agtttggcgc attcaag 227

<210> 43
<211> 176
<212> DNA
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<400> 43
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ctgctgtagg aacggtctca gggcttcttg gttgggggct caaacaagcc gaagaa 176

<210> 44
<211> 185
<212> DNA
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ataaa 185

<210> 45
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<212> DNA
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ggcgctgctg taggaacggt ctcagggctt cttagctggg ggctcaaaca agccgaacaa 180
gccaataaag ccccggacaa accc 204

<210> 46

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agccaataaa accccagata aacccga 207

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taaagcc 187

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ctgtaggaac ggtttcaggg cttcttagct gggggctcaa acaagccgaa gaagccaata 180
aaaccccaga taa 193

<210> 52
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<212> DNA
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<223> Helicobacter pylori vacA nucleic acid sequence

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ataaagcccc ggacaa 196

<210> 53
<211> 131
<212> DNA
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<220>
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<221> misc_feature
<222> 87, 106, 107, 108, 109
<223> n = A,T,C or G

<221> misc_feature
<222> 87, 106, 107, 108, 109
<223> n = A,T,C or G

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ggcaccgctg t 131

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ggcgctgctg taggaacggt ctcagggctt cttagttggg gactcaaaca agccgaagaa 180
gcgaa 185

<210> 55
<211> 201
<212> DNA
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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<221> misc_feature
<222> 87, 143, 165
<223> n = A,T,C or G

<221> misc_feature
<222> 87, 143, 165
<223> n = A,T,C or G

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ggcaccgctg taggaacggt ctnagggctt yttagttggg gactnwaaca agccgaagaa 180
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<222> 26, 27, 82
<223> n = A,T,C or G

<221> misc_feature
<222> 26, 27, 82
<223> n = A,T,C or G

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tgctgtagga acggtctcag ggcttcttag ctgggggctc aaacaagccg aacaagccaa 180
taaagcc 187

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<220>
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taaaacc 187

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taaaacc 187

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<223> n = A,T,C or G

<221> misc_feature
<222> 27, 34, 53, 55, 76, 82, 160
<223> n = A,T,C or G

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tcattccagc cattgttggg ggtatcgcca caggcaccgc tgtaggaacg gtctcagggc 120
ttcttagttg gggactcaaa caagccgaag aagcgaataa aaccccagta taaacccgat 180
aaagtttggc gcattcaag 199

<210> 61
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<212> DNA
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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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gaacggtctc agggcttctt agctgggggc tcaaacaagc cgaagaagcg aataaaaccc 180
cagataaa 188

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<220>
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aggcaccgct gtaggaacgg tctcagggct tcttagttgg ggactcaaac aagccgaaga 180
agcgaataaa accccagtat aaaccc 206

<210> 63
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<213> Artificial Sequence

<220>
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<222> 143, 165
<223> n = A,T,C or G

<221> misc_feature
<222> 143, 165
<223> n = A,T,C or G

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ggcgctgctg taggaacggt ctcagggctt cttagctggg ggctcaaaca agccgaacaa 180
gccaataaag ccccggacaa a 201

<210> 65
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<212> DNA
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ccgctgtagg aacggtctca gggcttctta gttggggact caaacaagcc gaagaagcga 180
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ggcactgctg taggaacggt ctcagggctt cttagttggg gactcaaaca agccgaagaa 180
gcgaataaaa cccca 195

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agccaataaa gccccg 196

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aagccaataa agcccc 196

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taacacgcca aacgatccca tacacagcga gagtcgcgcc ttttttacaa ccgtgatcat 120
tccagccatt gttgggggta tcgctacagg cgctgctgta ggaacggttt cagggcttct 180
tagctggggg ctcaaacaag ccgaacaagc caataaagcc ccggacaaac cc 232

<210> 71
<211> 228
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 71
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aacacgccaa acgatcccat acacagcgag agtcgcgcct ttttcacaac cgtgatcatt 120
ccagccattg ttggaggtat cgctacaggt gctgctgtag gaacggtctc agggcttctt 180
agctgggggc tcaaacaagc cgaacaagcc aataaagccc cggacaaa 228

<210> 72
<211> 228
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 72
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aacacgccaa acgatcccat acacagcgag agtcgcgcct ttttcacaac cgtgatcatt 120
ccagccattg ttgggggtat cgctacaggc gctgctgtag gaacggtctc agggcttctt 180
agctgggggc tcaaacaagc cgaacaagcc aataaagccc cggataaa 228

<210> 73
<211> 233
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 73
aatcgcccta ttatctctct cgctttagag ggggtgttaa taggcaccga actaggggct 60
aacacgccaa atgatcccat acacagcgag agtcgcgcct tttttacaac cgttattatt 120
ccagccattg ttgggggtat cgctacaggc gctgctgtag gaacggtctc agggcttctt 180

agctgggggc tcaaacaagc cgaacaagcc aataaagccc cggataaacc cga 233

<210> 74
<211> 300
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 74
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caacacctta gattttagtg gtgttacagg taaggtcaat atcaacaagc tcatcacagc 120
ttccactaat gtggccgtta aaaacttcaa cattaatgaa ttgattgtta aaaccaatgg 180
tgtgagtgtg ggggaataca ctcattttag cgaagatata ggcagtcaat cgcgcatcaa 240
taccgtgcgt ttggaaactg gcactaggtc aatcttttct gggggtgtta aatttaaagg 300

<210> 75
<211> 300
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 75
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caacacctta gattttagtg gtgttacagg taaggtcaat atcaacaagc tcattacggc 120
ttccactaat gtggccgtta aaaacttcaa cattaatgaa ttgttggtta agaccaatgg 180
ggtgagtgtg ggggaataca ctcattttag cgaagatata ggcagtcaat cgcgcatcaa 240
taccgtgcgt ttggaaactg gcactaggtc aatcttttct gggggtgtca aatttaaagg 300

<210> 76
<211> 300
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 76
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caacaccttg gattttagtg gcgttacaga caaagtcaat atcaacaagc tcatcacagc 120
ttccactaat gtggccatta aaaacttcaa cattaatgaa ttgttggtta agaccaatgg 180
ggtgagtgtg ggggaataca ctcattttag cgaagatata ggcagtcaat cgcgcatcaa 240
caccgtgcgt ttagaaactg gcactaggtc aatcttttct gggggtgtca aatttaaaag 300

<210> 77
<211> 300
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 77
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caacacctta gattttagtg gtgttacagg taaggtcaat atcaacaagc tcatcacagc 120

ttccactaat gtggccgcta aaaacttcaa cattaatgaa ttgattgtta aaaccaatgg 180
ggtgagtgtg ggggaataca ctcattttag cgaagatata ggcagtcaat cgcgcatcaa 240
taccgtgcgt ttggaaactg gcactaggtc aatctattct ggcggtgtta aatttaaagg 300

<210> 78
<211> 300
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 78
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caacacctta gattttagtg gtgttacagg taaggtcaat atcaacaagc tcatcacagc 120
ttccactaat gtggccgcta aaaacttcaa cattaatgaa ttgattgtta aaaccaatgg 180
ggtgagtgtg ggggaataca ctcattttag cgaagatata ggcagtcaat cgcgcatcaa 240
taccgtgcgt ttggaaactg gcactaggtc aatctattct ggcggtgtta aatttaaagg 300

<210> 79
<211> 300
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 79
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caacacctta gattttagtg gtgttacaaa caaagtcaat atcaacaagc tcattacagc 120
ttccactaat gtggccgtta aaaacttcaa cattaatgaa ttgttggtta agattaatgg 180
ggtgagtgtg ggggaataca cttattttag cgaagatata ggcagtcaat cgcgcatcaa 240
caccgtgcgt ttggaaactg gcactaggtc aatctattct ggcggtgtta aatttaaagg 300

<210> 80
<211> 300
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 80
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caacacctta gattttagtg gtgttacagg taaggtcaat atcaacaagc tcatcacggc 120
ttccactaat gtggccgtta aaaacaacaa cattaatgaa ttggtggtta aaaccaatgg 180
gataagtgtg ggggaataca ctcattttag cgaagatata ggcagtcaat cgcgcatcaa 240
taccgtgcgt ttggaaacag gcactaggtc aatcttttct gggggtgtca aatttaaaag 300

<210> 81
<211> 300
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 81
tttaaaagtg gatgctcata cagctaattt taaaggtatt gatacgggta atggtggttt 60
caacacctta gattttagtg gtgttacagg taaggtcaat atcaacaagc tcattacggc 120
ttccactaat gtagccgtta aaaacttcaa cattaatgaa ttgttggtta agaccaatgg 180
ggtgagtgtg ggggaataca ctcattttag cgaagatata ggcagtcaat cgcgcatcaa 240
caccgtgcgt ttggaaactg gcactaggtc aatcttttct gggggtgtca aatttaaaag 300

<210> 82
<211> 300
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 82
tttaaaggtg gatgctcata cagctaattt taaaggtatt gatacgggta atggtggttt 60
caacacctta gattttagtg gtgttacagg taaggtcaat atcaacaagc tcatcacagc 120
ttccactaat gtggccgtta aaaacttcaa cattaatgaa ttgattgtta aaaccaatgg 180
gataagtgtg ggggaataca ctcattttag cgaagatata ggaagtcaat cgcgcatcaa 240
taccgtgcgt ttggaaactg gcactagatc aatcttttct gggggtgtta aatttaaagg 300

<210> 83
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 83
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gaatttaaga gtgaatggcc atagcgctca ttttaaaaat attgatgcca gcaagagcga 120
taacgggcta aacactagcg ctttggattt cagcggcgtt acagacaaag tcaatatcaa 180
caagctcact acatctgcca ctaatgtgaa cgttaaaaac tttgacgtta aggaattggt 240
ggttacaacc cgtgttcaga gttttgggca atacactatt tttggcgaaa atataggcga 300
taagtctcgc attggtgtcg tgagtttgca aacgggatat agcccggcct attctggggg 360
cgttactttt aaaag 375

<210> 84
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 84
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gaatttaaga gtgaatggcc atagcgctca ttttaaaaat attgatgcca gtaagagcga 120
taacgggcta aacactagtg ctttggattt tagcggcgtt acagataaag tcaatatcaa 180
caagctcact acatctgcca ctaatgtgaa cgttaaaaac tttgacatta aggaattggt 240
ggttacaacc cgagttcaaa gttttgggca atacactatt tttggcgaaa atataggcga 300
taagtctcgc attggtgtcg ttagtttgca aacgggatat agcccggcct attctggggg 360
cgttactttt aaaag 375

<210> 85
<211> 374
<212> DNA

<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 85
tttaagagtg gatgctcata cagcttattt taatggcaat atttatctgg gaaaatccac 60
gaatttaaga gtgaatggcc atagcgctca ttttaaaaat attgatgcca gtaagagcga 120
taacgggcta aacactacca ctttggattt cagcggcgtt acagataaag tcaatatcaa 180
caagctcact acatctgcca ctaatgtgaa cattaaaaac tttgacatta aggaattagt 240
ggttacaacc cgagttcaga gttttgggca atacactatt tttggcgaaa atataggcga 300
taagctgcac attggtgtcg tgagtttgca aacgggatat agcccagcct attctggggg 360
gcttactttt aaag 374

<210> 86
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 86
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gaatttaaga gtgaatggcc atagcgctca ttttaaaaat attgatgcca gtaagagcga 120
taacgggcta aacactagct ctttggattt cagtggcgtt acagacaaag tcaatatcaa 180
caagctcact acatctgcca ctaatgtgaa cgttaaaaac tttgacatta aggaattggt 240
ggttacaacc cgcgttcaga gttttgggca atacactatt tttggcgaaa atataggcga 300
taagtctcgc attggtgtcg ttagtttgca aacgggatat agcccggcct attctggggg 360
cgttactttt aaaag 375

<210> 87
<211> 365
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 87
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gtgaatggcc atagcgctca ttttaaaaat attgatgcca gtaagagcga taacgggcta 120
aacactagcg ctttggattt yagcggcgtt acagayaaag tcaatatcaa caagctcact 180
acatctgcca ctaatgtgaa cgttaaaaac tttgacatta aggaattagt ggttacaacc 240
cgagttcaaa gttttgggca atacactatt tttggcgaaa atataggcga taagtctcgc 300
attggtgtcg ttagtttgca aacgggatat agcccggcct attctggggg cgttactttt 360
aaaag 365

<210> 88
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 88
tttaagaggg gatgctcata cagcttattt taatggcaat atttatttgg gaaaatccac 60
gaatttaaga gtgaatggcc atagcgctca ttttaaaaat attgatgcca gtaagagcga 120
taacgggcta aacactagcg ytttggattt tagcggcgtt acagayaaag tcaatatcaa 180
caagctcact acatctgcca ctaatgtgaa crttaaaaac tttgayatta aggaattggt 240

ggttacaacc cgagttcaaa gttttgggca atacactatt tttggcgaaa atataggcga 300
tmagtctcgc attggtgtcg ttagtttgca aacgggatat agcccrgcct attctggggg 360
cgttactttt aaaag 375

<210> 89
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 89
tttaagcgtg gatgctcata cagcttattt taatggtaat atttatctgg gaaaatccac 60
gaatttaaga gtgaatggcc atagcgctca ttttaaaaat attgatgcca caaagagcga 120
taacgggcta aacactagcg ctttggattt cagcggcgtt acagataaag tcaatatcaa 180
caagctcact acatctgcca ctaacgtgaa cattaaaaac tttgacatta aggaattggt 240
ggttacaacc cgagttcaaa gttttgggca atacactatt tttggcgaaa atataggcga 300
taagtctcgc attggtgtcg tgagtttgca aacgggatat agcccggcct attctggggg 360
cgttactttt aaaag 375

<210> 90
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 90
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gaatttaaaa gtgaatggcc atagcgctca ttttaaaaat attgatgcca gtaagagcga 120
taatggtcta aacactagtg ctttggattt gagcggcgtt acagacaaag tcaatatcaa 180
caagctcact acagctgcca ctaatgtgaa cattaaaaac tttgacatta aggaattagt 240
ggttacgacc cgtgttcaga gttttgggca atacactatt tttggcgaaa atataggaga 300
tcaatcgcgc attggtgtcg ttagtttgca aactggctat agcccggcct attctggggg 360
cgttactttt aaaag 375

<210> 91
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 91
cttaagagtg gatgctcata cagcttattt taatggcaat atttatctgg gaaaatccac 60
gaatttaaga gtgaatggcc atagcgctca ttttaaaaat attgatgcta gtaagagcga 120
taacgggcta aacactagcg ctttggattt tagcggcgtt acagacaaag tcaatatcaa 180
caagctcact acatctgcca ctaatgtgaa cattaaaaac tttgacatta aggaattggt 240
ggttacaacc cgagttcaaa gttttgggca atacactatt tttggcgaaa atataggcga 300
taagtctcgc attggtgtcg tgagtttgca aacgggatat agcccggcct attctggggg 360
cgttactttt aaaag 375

<210> 92
<211> 449
<212> DNA
<213> Artificial Sequence

<220>

<223> Helicobacter pylori cagA nucleic acid sequence

<400> 92
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tttatcaata atcttcaagt agcttttctt aaagttgata acgctgtcgc ttcatacgat 120
cctgatcaaa aaccaatcgt tgataagaac gatagggata ataggcaagc ttttgatgga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat caataagagc aatgatttaa tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcgtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcataca acccccctat 449

<210> 93
<211> 449
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

<400> 93
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tttatcaata atcttcaagt agcttttctt aaagttgata acgctgtcgc ttcatacgat 120
cctgatcaaa aaccaatcgt tgataagaac gatagggata acaggcaagc ttttgatgga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat caataagagc aatgatttaa tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcgtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcataca acccccctat 449

<210> 94
<211> 449
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

<400> 94
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tttatcaata atcttcaagt agcttttctt aaagttgata acgctgtcgc ttcatacgat 120
cctgatcaaa aaccaatcgt tgataagaac gatagggata acaggcaagc ttttgatgga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat caataagagc aatgatttaa tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcgtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcataca acccccctat 449

<210> 95
<211> 449
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

<400> 95
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tttatcaata atcttcaagt ggcttttctt aaagttgata acgctgtcgc ttcatacgat 120
cctgatcaaa aaccaatcgt tgataagaac gatagggata ataggcaagc ttttgatgga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240

cagtattttt cagactttat caataagagc aatgatttaa tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaattttggg atcagcgtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
ttcatggaaa atatcataca acccccctat 449

<210> 96
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cctgatcaaa aaccaatcgt tgataagaac gatagggata acaggcaagc ttttgatgga 180
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cagtattttt caaactttat caataagagc aatgatctaa tcaacaaaga caatctcatt 300
gatgtagaat cttccaaaaa gagctttcag aaatttgggg atcagcgtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcataca acccccctat 449

<210> 97
<211> 449
<212> DNA
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<220>
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cctgaccaaa aaccaatcgt tgataagaac gatagggata acaggcaagc ttttgataga 180
atctcacaat taagggagga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat cgataagagc aacgatttaa tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcgtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcataca acccccctat 449

<210> 98
<211> 449
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

<400> 98
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tttatcaata atcttcaagt ggcttttctt aaagttgata acgctgtcgc ttcatacgat 120
cctgatcaaa aaccaattat tgataagaac gatagggata acaggcaagc ttttgatgga 180
atctcgcaat taagggaaga atattccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat cgataagagc aatgatttaa tcaacaaaga caatctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcgtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcataca acccccctat 449

<210> 99
<211> 449

<212> DNA
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<220>
<223> Helicobacter pylori cagA nucleic acid sequence

<400> 99
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tttatcaata atcttcaagt agcttttctt aaagttgata atgctgtcgc ttcatacgat 120
tctgatcaaa aaccaatcat tgataagaac gatagggata acaggcaagc ttttgataga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat cgataagagc aacgatttaa tcaacaaaga caatctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcgtta ccgaattttc 360
acaagttggg tgtcccatca aaatgatccg tctaaaatca acacccgatc gatccgaaat 420
tttatggaaa atatcataca acccccctat 449

<210> 100
<211> 449
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

<400> 100
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tttattaata atcttcaggt agcttttctt aagcttgata acgctgtcgc ttcatttgat 120
cctgatcaaa aaccaatcgt tgataagaat gatagggata acaggcaagc ttttgatgga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat caataagagc aatgatttaa tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcgtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccaaaat 420
tttatggaaa atatcataca acccccctat 449

<210> 101
<211> 449
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori cagA nucleic acid sequence

<400> 101
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tttatcaata atcttcaagt ggcttttctt aagcttgata acgctgtcgc ttcatttgat 120
cctgatcaaa aaccaatcgt tgataagaac gatagggata acaggcaagc ttttgatgga 180
atctcgcaat taagggaaga atactccaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt cagactttat caataagagc aatgatttaa tcaacaaaga cgctctcatt 300
gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcgtta ccgaattttc 360
acaagttggg tgtcccatca aaacgatccg tctaaaatca acacccgatc gatccgaaat 420
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<210> 102
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gatgtagaat cttccacaaa gagctttcag aaatttgggg atcagcgtta ccgaattttc 360
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caagcttttg agaaaatctc gcagctaagg gaggaattcg ctaataaagc gatcaaaaat 240
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caagcttttg agaaaatctc gcaactaagg gaagaatacg ccaataaagc gatcaaaaat 240
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caacaaatcc gaaattttat ggaaaatatc atacaacccc ctat 464

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gtcgcttcat ttgatcccga tcaaaaacca atcgttgata agaatgatag ggataacagg 180
caagcttttg agaaaatctc gcaactaagg gaagaatacg ccaataaagc gatcaaaaat 240
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caagcttttg agaaaatctc gcaactaagg gaagaatacg ccaataaagc gatcaaaaat 240
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aaagacaatc tcattgctgt agattcttcc gtagatagct ttaagaaatt tggggatcag 360
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caagcttttg agaaaatctc gcaactaagg gaagaatacg ccaataaagc gatcaaaaat 240
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aaagacaatc tcattgctgt agattcttcc gtagatagct ttaagaaatt tggggatcag 360
cgttaccaaa tttttacgag ttgggtgtcc cttcaaaaag atccgtctca aatcaacacc 420
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cattgttggg gg 132

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tgccgccttt ttcacgaccg tgatcattcc agccattgtt ggggg 105

<210> 150
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 150
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tgccgccttt ttcacgaccg tgatcattcc agccattgtt ggggg 105

<210> 151
<211> 105
<212> DNA

<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 151
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tgccgccttt ttcacgaccg tgatcattcc agccattgtt ggggg 105

<210> 152
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 152
ccctttagtt tctctcgttt tagcaggagc gttgattagc gccataccgc aacaaagtca 60
tgccgccttt ttcacaaccg tgatcattcc agccattgtt ggggg 105

<210> 153
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 153
ccctattatt tctctcgttt tagcaggagc gttgattagc tccataccgc aagaaagtca 60
tgccgccttt ttcacgaccg tgatcattcc agccattgtt ggggg 105

<210> 154
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<221> misc_feature
<222> 27, 34, 53, 55, 76, 82
<223> n = A,T,C or G

<221> misc_feature
<222> 27, 34, 53, 55, 76, 82
<223> n = A,T,C or G

<400> 154
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tgccgccttt ttcacnaccg tnatcattcc agccattgtt ggggg 105

<210> 155
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 155
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tgccgccttt ttcacaaccg tgatcattcc agccattgtg ggggg 105

<210> 156
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 156
ccctttagtt tctctcgttt tagcaggagc gttgattagc gccataccgc aacaaagtca 60
tgccgccttt ttcacaaccg tgatcattcc agccattgtt ggggg 105

<210> 157
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 157
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tgccgccttt ttcacaaccg tgatcattcc agccattgtt ggggg 105

<210> 158
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 158
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tgccgccttt ttcacaaccg tgatcattcc agccattgtt ggggg 105

<210> 159
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 159
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tgccgccttt ttcacgaccg tgatcattcc agccattgtt ggggg 105

<210> 160
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 160

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tgccgccttt ttcacgaccg tgatcattcc agccattgtt ggggg 105

<210> 161
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 161
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tgccgccttt ttcacaaccg tgatcattcc agcvattgtg gggag 105

<210> 162
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 162
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tgccgccttt ttcacgaccg tgatcattcc agccattgtt ggggg 105

<210> 163
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 163
cccttttagtt tctctcgttt tagcaggagc gttgattagt gccataccgc aagagagtca 60
tgccgccttt ttcacgaccg tgatcattcc agccattgtt ggggg 105

<210> 164
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 164
cccttttagtt tctctcgttt tagcaggagc gttgattagt gccataccgc aagagagtca 60
tgccgccttt ttcacgaccg tgatcattcc agccattgtt ggggg 105

<210> 165
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 165
cccttttagtt tctctcgttt tagcaggagc gttggttagt gccataccgc aagagagtca 60

tgccgccttt ttcacgaccg tgatcattcc agccattgtt ggggg 105

<210> 166
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 166
ccctttagtt tctctcgttt tagcaggagc gttgattagt gccataccgc aagagagtca 60
tgccgccttt ttcacaaccg tgatcattcc arccattgtt ggggg 105

<210> 167
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 167
ccctttagtt tctcttgttt tagcaggagc gttgattagc gccataccgc aagagagtca 60
tgccgccttt ttcacaaccg taatcattcc agccattgtt ggggg 105

<210> 168
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 168
ccctttagtt tctcttgttt tagcaggagc gttgattagc gccataccgc aagagagtca 60
tgccgccttt ttcacgaccg taatcattcc agccattgtt ggggg 105

<210> 169
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<221> misc_feature
<222> 82
<223> n = A,T,C or G

<221> misc_feature
<222> 82
<223> n = A,T,C or G

<400> 169
ccctttagtt tctctcgttt tagcaggagc gttgattagc gccataccgc aagagagtca 60
tgccgccttt ttcacaaccg tnatcattcc agccattgtt ggggg 105

<210> 170
<211> 105
<212> DNA

<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 170
ccctttggtt tctctcgttt tagcaggagc gttgattagc tccataccgc aagagagtca 60
tgccgccttt ttcacacccg tgatcattcc agccattgtt ggggg 105

<210> 171
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 171
ccctttggtt tctctcgttt tagcaggagc gttgattagc tccataccgc aagagagtca 60
tgccgccttt ttcacaaccg tgatcattcc agccattgtt ggggg 105

<210> 172
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 172
ccctttggtt tctctcgttt tagcaggagc gttgattagc tccataccgc aagagagtca 60
tgccgccttt ttcacaaccg tgatcattcc agccattgtt ggggg 105

<210> 173
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 173
ccctttggtt tctctcgttt tagcaggagc gttgattagc tccataccgc aagagagtca 60
tgccgccttt ttcacaaccg tgatcattcc agccattgtt ggggg 105

<210> 174
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 174
ccctttagtt tctctcgttt tagcaggagc gttgattagc tccataccgc aagagagtca 60
tgccgccttt ttcacaaccg tgatcattcc agccattgtt ggggg 105

<210> 175
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<221> misc_feature
<222> 26, 27
<223> n = A,T,C or G

<221> misc_feature
<222> 26, 27
<223> n = A,T,C or G

<400> 175
ccctttagtt tctctcgttt tagcannagc gttgattagc rccataccgc aagagagtca 60
tgccgccttt tttacaaccg tgatcattcc agccattgtt ggggg 105

<210> 176
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<221> misc_feature
<222> 82, 101, 102, 103, 104
<223> n = A,T,C or G

<221> misc_feature
<222> 82, 101, 102, 103, 104
<223> n = A,T,C or G

<400> 176
cctttagtt tctcttgttt tagcaggagc gttgattagc gccataccgc aacaaagtca 60
tgccgccttt ttcacgaccg tnatcattcc agccattgtt nnnng 105

<210> 177
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 177
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tgccgccttt ttcacgaccg tgatcattcc agccattgtt ggggg 105

<210> 178
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 178
ccctctggtt tctctcgctt tagtaggagc attggtcagc atcacaccgc aacaaagtca 60
tgccgccttt ttcacaaccg tgatcattcc agccattgtt ggggg 105

<210> 179

<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 179
ccctctggtt tctctcgctt tagtaggagc attggtcagc atcacaccgc aacaaagtca 60
tgccgccttt ttcacaaccg tgatcattcc agccattgtt ggggg 105

<210> 180
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 180
ccctctggtt tctctcgctt tagtaggagc attggtcagc atcacaccgc aacaaagtca 60
tgccgccttt ttcacaaccg tgatcattcc agccattgtt ggagg 105

<210> 181
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 181
ccctctggtt tctctcgctt tagtaggagc attggtcagc atcacaccgc aacaaagtca 60
tgccgccttt tttacaaccg tgatcattcc agccattgtt ggagg 105

<210> 182
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 182
ccctttggtt tctctcgctt tagtaggagc attggtcagc atcacaccgc aacaaagtca 60
tgccgccttt ttcacgaccg tgatcattcc agccattgtt ggggg 105

<210> 183
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 183
ccctctggtt tctcttgctt tagtaggagc gttagtcagc atcacaccgc aacaaagtca 60
tgccgccttt ttcacaaccg tgatcattcc agccattgtt ggggg 105

<210> 184
<211> 105

<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 184
ccctctagtt tctctcgctt tagtaggagc attggtcagc atcacaccgc aacaaagtca 60
tgccgccttt ttcacaaccg tgatcattcc agccattgtg ggggg 105

<210> 185
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 185
ccctttagtt tctcttgctt tagtaggagc attggtcagc atcacaccgc aacaaagtca 60
tgccgccttt ttcacaaccg tgatcattcc agccattgtt ggggg 105

<210> 186
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<221> misc_feature
<222> 7, 27, 34, 55, 82
<223> n = A,T,C or G

<221> misc_feature
<222> 7, 27, 34, 55, 82
<223> n = A,T,C or G

<400> 186
ccctctngtt tctctcgctt tagtagnagc attngtcagc atcacaccgc aacanagtca 60
tgccgccttt ttcacaaccg tnatcattcc agccattgtt ggggg 105

<210> 187
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 187
ccctctggtt tctctcgctt tagtaggagc gttggtcagc atcacaccgc aacaaagtca 60
tgccgccttt attacaaccg tgatcattcc agccattgtt ggggg 105

<210> 188
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 188
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tgccgccttt tttacaaccg tgattattcc agccattgtg ggggg 105

<210> 189
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 189
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tgccgctctt tttacaaccg tgattattcc agccattgtg ggggg 105

<210> 190
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 190
ccctctggtt tctcttgctt tagtaggagc attggtcagc atcacaccgc aacaaagtca 60
tgccgctctt tttacaaccg tgattattcc agccattgtg ggggg 105

<210> 191
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 191
ccctctggtt tctctcgctt tagtaggagc attggtcagc atcacaccgc aacaaagtca 60
tgccgctctt tttacaaccg tgattattcc agccattgtg ggggg 105

<210> 192
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 192
ccctytggtt tctcttgctt tagtaggagc attgrttagy rycayaccgc aacaaagtca 60
tgccgccttt ttyacraccg tgatcattcc agccattgtt ggrgg 105

<210> 193
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 193
ccctattatc tctctcgctt tagtaggagc attggtcagc atcacaccgc aacaaagtca 60
tgccgccttt ttcacaaccg tgttcattcc agccattgtt ggggg 105

<210> 194
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 194
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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccacaaagag cgataacggg 120
ctaaacacta gcactttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttacg 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaactggc tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 195
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 195
gtggatgctc atacagctta ttttaatggc aatatttatc tgggaaaatc cacgaattta 60
agagtgaatg gccatagcgc tcattttaaa aatattgatg ccacaaagag cgataacggg 120
ctaaacacta gtgctttgga tttgagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtcg 300
cacattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 196
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 196
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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccacaaagag cgataacggg 120
ctaaacacta gcgctttgga tttgagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtcg 300
cgcattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 197
<211> 362
<212> DNA
<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 197
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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccacaaagag cgataacggg 120
ctaaacacta gcgctttgga tttgagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtcg 300
cgcattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 198
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 198
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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccacaaagag cgataacggg 120
ctaaacacta gcgctttgga tttcagcggc gttacagata aagtcaatat caacaagctc 180
actacatctg ccactaacgt gaacattaaa aactttgaca ttaaggaatt ggtggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 199
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 199
gtggatgctc atacagctta ttttaatggc aatatttatc tgggaaaatc cacgaattta 60
agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gcactttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgatcagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cttattctgg gggcgttact 360
tt 362

<210> 200
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 200
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agagtgaatg gccatagcgc tcattttaaa aatattgatg ctagtaagag cgataacggg 120
ctaaacacta gcgctttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt ggtggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 201
<211> 2
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 201
wc 2

<210> 202
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 202
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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagcaagag cgataacggg 120
ctaaacacta gtgctttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 203
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 203
gtggatgctc atacagctta ttttaatggc aatgtttatc tgggaaaatc cacgaattta 60
agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagcaagag cgataacggg 120
ctaaacacta gtgctttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 204
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 204
gtggatgctc atacagctta ttttaatggc aatgtttatc tgggaaaatc cacgaattta 60
agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagcaagag cgataacggg 120
ctaaacacta gtgctttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360

tt 362

<210> 205
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 205
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agagtgaatg cccatagcgc tcattttaaa aatattgatg ccagcaagag cgataacggg 120
ctaaacacta gtgctttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
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tt 362

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ctaaacacta gcgctttgga ttttagtggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccag cctattctgg gggcgttact 360
tt 362

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ctaaacacta gtgctttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agttgttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccag cctattctgg gggcgttact 360
tt 362

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<211> 362
<212> DNA
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<223> Helicobacter pylori vacA nucleic acid sequence

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aaagtgaatg gccatagcgc tcattttaaa aatattgatg ccagtaagag cgataatggt 120
ctaaacacta gcgctttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaatggga tatagcccgg cctattctgg gggcgttact 360
tt 362

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<211> 362
<212> DNA
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ctaaacacta gcgctttgga tttgagcggc gttacagaca aagtcaatat caacaagctc 180
actacagctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt ggttgttacg 240
acccgtgttc agagttttgg acaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccgg cttattctgg gggcgttact 360
tt 362

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<211> 362
<212> DNA
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ctaaacacta gctctttgga tttcagtggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtggttaca 240
acccgagttc agagttttgg gcaatacact atttttggcg aaattatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 211
<211> 362
<212> DNA
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<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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ctaaacacta gtgctttgga ttttagcggc gttacagata aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 212

<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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ctaaacacta gcgctttgga tttgagtggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 213
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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ctaaacacta gtgctttgga tttgagcggc gttacagaca aagtcaatat caacaagctc 180
actacagctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttacg 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg agatcaatcg 300
cgcattggtg tcgttagttt gcaaactggc tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 214
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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ctaaacacta gcgctttgga tttgagcggc gttacaaaca aggtcaatat caacaagctc 180
actacagctg ccactaatgt gtccattaaa aactttgaca ttaaggaatt agtggttacg 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgatcaatcg 300
cgcattggtg tcgttagttt gcaaactggc tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 215
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagtaagag cgataacggg 120

ctaaacacta gcgctttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt ggtggttaca 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 216
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagcaagag cgataacggg 120
ctaaacacta gcgctttgga ttttagcggc gttacagata aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 217
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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agagtgaatg gccatagcgc tcattttaaa aatattgatg ctagtaagag cgataacggg 120
ctaaacacta gcgctttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt agtggttaca 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccag cctattctgg gggcgttact 360
tt 362

<210> 218
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagcaagag cgataacggg 120
ctaaacacta gcgctttgga tttcagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgacg ttaaggaatt ggtggttaca 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 219
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagcaagag cgataacggg 120
ctaaacacta gcactttgga ttttagcggc gttacagata aagtcaatat caacaagctc 180
actacagctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt agtggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 220
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gcgctttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt agtggttaca 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 221
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 221
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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gtgctttgga ttttagcggc gttacagata aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 222
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 222
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agattgaatg gccatagcgc tcattttaaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gcgctttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtggttaca 240
acccgagttc agagttttgg gcaatactct atttttggcg aaaatatagg cgataagtcg 300

cgcattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 223
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 223
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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccacaaagag cgataacggg 120
ctaaacacta gcactttgga tttgagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttacg 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 224
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 224
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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccacaaagag cgataacggg 120
ctaaacatta gcactttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 225
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 225
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agagtgaatg gccataacgc tcattttaaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gcactttgga tttgagcggc gttacagaca aagtcaatat caacaagctc 180
actacagctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttacg 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg tgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 226
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagtgagag cgataacggg 120
ctaaacacta gcgctttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgaca ttaaggaatt ggtggttacg 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tgtcgcccgg cctgttctgg gggcgttact 360
tt 362

<210> 227
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gcgytttgga ttttagcggc gttacagaya aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacrttaaa aactttgaya ttaaggaatt ggtggttaca 240
acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgatmagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccrg cctattctgg gggcgttact 360
tt 362

<210> 228
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccacaaagag cgataatggt 120
ataaacacta gcactttgga tttgagcggc gttacagaca aggtcaatat caacaagctc 180
attacagctt ccactaatgt gaacattaaa aactttgaca ttaaggaatt ggtggttaca 240
acccgtgttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 229
<211> 362
<212> DNA
<213> Artificial Sequence

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ctaaacacta gcaccttgga tttcagtggc gttacagaca aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacgttaaa aactttgata ttaaggaatt ggtggttaca 240
acccgagttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtcg 300
cgcattggtg tcgtgagttt gcaaacggga tatagcccag cttattctgg gggcgttact 360
tt 362

<210> 230
<211> 362
<212> DNA
<213> Artificial Sequence

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<223> Helicobacter pylori vacA nucleic acid sequence

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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta gcgctttgga ttttagcggc gttacagaca aagttaatat caacaagctc 180
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acccgagttc aaagttttgg gcaatacact atttttggcg aaaatatagg cgataagtct 300
cgcattggtg tcgtgagttt gcaaacggga tatagccctg cttattctgg gggcgttact 360
tt 362

<210> 231
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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agagtgaatg gccatagcgc tcattttaaa aatattgatg ccagtaagag cgataacggg 120
ctaaacacta ccactttgga tttcagcggc gttacagata aagtcaatat caacaagctc 180
actacatctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt agtggttaca 240
acccgagttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagctg 300
cacattggtg tcgtgagttt gcaaacggga tatagcccag cctattctgg ggggcttact 360
tt 362

<210> 232
<211> 362
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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ctaaacacta gcgctttgga tttgagcggc gttacaaaca aggtcaatat caacaagctc 180
actacagctg ccactaatgt gaacattaaa aactttgaca ttaaggaatt ggtggttaca 240
acccgcgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgataagtcg 300
cgcattggtg tcgttagttt gcaaactggc tatagcccgg cctattctgg gggcgttact 360
tt 362

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<211> 362
<212> DNA
<213> Artificial Sequence

<220>
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ctaaacacta gcgctttgga tttgagcggc gttacaaaca aggtcaatat caacaagctc 180
actacagctg ccactaatgt gtccattaaa aactttgaca ttaaggaatt agtggttacg 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgatcaatcg 300
cgcattggtg tcgttagttt gcaaactggc tatagcccgg cctattctgg gggcgttact 360
tt 362

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<211> 362
<212> DNA
<213> Artificial Sequence

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<223> Helicobacter pylori vacA nucleic acid sequence

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aaagtgaatg gccatagcgc tcattttaaa aatattgatg ccactaagag cgataatggt 120
ctatacacta gcgctttgga tttgagcggc gttacaaaca aggtcaatat taacacgctc 180
actacagctg ccactaatgt gtccattaaa aactttgaca ttaaggaatt agtggttacg 240
acccgtgttc agagttttgg gcaatacact atttttggcg aaaatatagg cgatcaatcg 300
cgcattggtg tcgttagttt gcaaactggc tatagcccgg cctattctgg gggcgttact 360
tt 362

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<211> 362
<212> DNA
<213> Artificial Sequence

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atcgacacca ccattttgga ttttagcggc gttacaaaca aggtcaatat caacaagctc 180
accacagctg ccactaatgc ggccattaaa aattttgaca ttaaggaatt ggttgttaca 240
accaatgttt tgagtgtggg gaaatacact gattttaccg aagatatagg cgatcaatcc 300
cgcattggta tcgtgcgttt gcaaatggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 236
<211> 362
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<223> Helicobacter pylori vacA nucleic acid sequence

<400> 236
gtggatgccc atacgatcaa ttttaatggc aatatgtatt tgggaagatt cacgcattta 60
aaagtgaatg gtcatacagc caattttaaa gatattgatg ccagcaaggg tagaaatggt 120
atcgacacca ccattttgga ttttagcggc gttacaaaca aggtcaatat caacaagctc 180
accacagctg ccactaatgc ggccattaaa aattttgaca ttaaggaatt ggttgttaca 240
accaatgttt tgagtgtggg gaaatacact gattttaccg aagatatagg cgatcaatcc 300
cgcattggta tcgttagttt gcaaacggga tatagcccgg cctattctgg gggcgttact 360
tt 362

<210> 237
<211> 362
<212> DNA

<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 237
gtggatgccc atacgatcaa ttttaatggc aacatgtatt tgggaagatt cacgcattta 60
aaagtgaatg gccatacagc caattttaaa gatattgatg ccagcaaggg tagaaatggt 120
atcgacacca ctattttgga ttttagcggc gttacagaca aagtcaatat caacaagctc 180
actacagctg ccactaatgt gtccattaaa aactttgaca ttaaggaatt ggttgttaca 240
accaatgttt tgagtgtggg gaaatacact gattttaccg aagatatagg cgatcaatcg 300
cacattggtg tcgttagttt gcaaactggc tatagcccgg tctattctgg gggcgttact 360
tt 362

<210> 238
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 238
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcattac ggcttccact 120
aatgtggccg ctaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatctat tctggcggtg ttaaattt 288

<210> 239
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 239
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcatcac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggtgtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatcttt tctgggggtg ttaaattt 288

<210> 240
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 240
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcatcac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tgggataagt 180
gtgggggaat acactcattt tagcgaagat ataggaagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag atcaatcttt tctgggggtg ttaaattt 288

<210> 241
<211> 288

<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 241
gtggatgctc atacagctaa ttttaaaggt attgatacgg gcaatggtgg tttcaacacc 60
ttagatttta gtggcgttac agacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattgttgg ttaagaccaa tggggtgagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 242
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 242
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggcgttac agacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattggttg ttaagaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caacaccgtg 240
cgtttggaaa ctggcactag gtcaatctat tctgggggtg ttaaattt 288

<210> 243
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 243
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcatcac ggcttccact 120
aatgtggccg ttaaaaacaa caacattaat gaattggtgg ttaaaaccaa tgggataagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa caggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 244
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 244
gtggatgctc atacagctaa ttttaaaggt attgatactg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aaacaaagtc aatatcaaca agctcattac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgttgg ttaagattaa tggggtgagt 180
gtgggggaat acacttattt tagcgaagat ataggcagtc aatcgcgcat caacaccgtg 240
cgtttggaaa ctggcactag gtcaatctat tctggcggtg ttaaattt 288

<210> 245
<211> 288
<212> DNA

<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 245
gtggatgctc atacagctaa ttttaaaggt attgatactg gtaatggtgg tttcaacacc 60
ttagatttca gtggtgttac agacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattggtgg ttaaaaccaa tggtataagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caacaccgtg 240
cgtttggaaa ctggcactag gtcaatctat tctggcggtg ttaaattt 288

<210> 246
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 246
gtggatgctc atacagctaa ttttaaaggt attgatactg gtaatggtgg tttcaacacc 60
ttagatttca gtggtgttac agacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattggtgg ttaaaaccaa tggtataagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatctat tctggcggtg ttaaattt 288

<210> 247
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 247
gtggatgccc atacagctaa ttttaaaggt attgatactg gtaatggtgg tttcaacacc 60
ttagatttca gtggcgttac aaacaaagtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattggtgg ttaaaaccaa tggtataagc 180
gtgggggaat acactaattt tagcgaagat ataggcagtc aatcgcgcat caacaccgtg 240
cgtttggaaa ctggcactag gtcaatctat tctggcggtg ttaaattt 288

<210> 248
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 248
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcatcac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatctat tctggcggtg ttaaattt 288

<210> 249
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 249
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcatcac agcttccact 120
aatgtggccg ctaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatctat tctggcggtg ttaaattt 288

<210> 250
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 250
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcatcac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggtgtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caacaccgtg 240
cgtttggaaa ctggcactag gtcaatctat tctggcggtg ttaaattt 288

<210> 251
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 251
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatattaaca agctcattac ggcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatcttt tctgggggtg ttaaattt 288

<210> 252
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 252
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgtgac aggtatagtc aatatcaaca agctcatcac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 253
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 253
gtggatggtc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcataac ggcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggtgtgagt 180
gtgggggaat acacttattt tagcgaagat ataggcagtc aatcgcacat caataccgtg 240
cgtttggaaa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 254
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 254
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcattac ggcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggtgtgagt 180
gtgggggaat acacttattt tagcgaagat ataggcagtc aatcgcacat caataccgtg 240
cgtttggaaa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 255
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 255
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac agacaaagtc aatatcaaca agctcatcac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcaccag gtcaatcttt tctgggggtg tcaaattt 288

<210> 256
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 256
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac agacaaagtc aatatcaaca agctcattac ggcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 257
<211> 288
<212> DNA
<213> Artificial Sequence

<220>

<223> Helicobacter pylori vacA nucleic acid sequence

<400> 257
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac agacaaagtc aatatcaaca agctcattac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattggttg ttaaaaccaa tggggtaagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcacat caataccgtg 240
cgtttggaaa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 258
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 258
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aaacaaggtc aatatcaaca agctcattac ggcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattgattg ttaaaaccaa tgggatgagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 259
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 259
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aaacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 260
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 260
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aaacaaggtc aatatcaaca agctcattac ggcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgattg ttaaaaccaa tggggtgagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 261
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 261
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttggatttta gtggcgttac agacaaagtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattgttgg ttaagaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caacaccgtg 240
cgtttagaaa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 262
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 262
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcattac ggcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgttgg ttaagaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 263
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 263
gtggatgctc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aggtaaggtc aatatcaaca agctcattac ggcttccact 120
aatgtagccg ttaaaaactt caacattaat gaattgttgg ttaagaccaa tggggtgagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caacaccgtg 240
cgtttggaaa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 264
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 264
gtggatggtc atacagctaa ttttaaaggt attgatacgg gtaatggtgg tttccacacc 60
ttagatttta gtggtgttac aggtaaggtc catatccaca agctcattac ggcttccact 120
aatgtggccg ttaaaaactt ccacattaat gaattgattg gtaaaaccaa tgggataagt 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatcttt tctgggggtg tcaaattt 288

<210> 265
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 265
gcgagcgctc atacggtcaa ttttaaagat attgatactg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aaacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattgttgg ttaaaaccaa tgggataagt 180
gtgggggaat acactaattt tagcgaagat ataggcaatc aatcgcgcat caacaccgtg 240
cgtttggaaa ctggcaccag gtcaatctat tttgggggtg ttaaatta 288

<210> 266
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 266
gcgagcgctc atacggtcaa ttttaaagat attgatactg gtaatggtgg tttcaacacc 60
ttagacttta gtggtgttac aaacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgttgg ttaaaaccaa tgggataagt 180
gtgggggaat acactaattt tagcgaagat ataggcaatc aatcgcgcat caacaccgtg 240
cgtttggaaa ctggcactag gtcaatctat tctgggggtg ttaaattt 288

<210> 267
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 267
gcgagcgctc atacggtcaa ttttaaagat attgatactg gtaatggtgg tttcaacacc 60
ttagacttta gtggtgttac aaacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattgttgg ttaaaaccaa tgggataagt 180
gtgggggaat acactaattt tagcgaagat ataggcaatc aatcgcacat caacaccgtg 240
cgtttagaaa ctggcactag gtcaatctat tctgggggtg ttaagttt 288

<210> 268
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 268
gcgagacgtc atacggtcaa ttttaaagat attgatactg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aaacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggccg ttaaaaactt caacattagt gaattgttgg ttaaaaccaa tgggataagt 180
gtgggggaat acactaattt tagcggagat ataggcaatc aatcgcgcat caacaccgtg 240
cgtttggaaa ctggcactag gtcaatctat tctgggggtg ttaagttt 288

<210> 269
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 269

gtggatgccc atacggtcaa ttttaaaggt attgatactg gtaatggtgg tttcaacacc 60
ttagatttca gtggtgttac agacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattggtgg ttaaaaccaa tggtataagc 180
gtgggggaat acactcattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttggaaa ctggcactag gtcaatctat tctggcggtg ttaaattt 288

<210> 270
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 270
gcgagcgctc atacggtcaa ttttaaagat attgatactg gtaatggtgg tttcaacacc 60
ttagacttta gtggtgttac aaacaaggtc aatatcaaca aactcattac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgttgg ttaaaaccaa tgggataagt 180
gtgggggaat acactaattt tagcgaagat ataggcaatc aatcgcgcat caacaccgtg 240
cgtttagaaa ctggcaccag gtcaatctat tctgggggtg ttaagttt 288

<210> 271
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 271
gcgagcgctc atacggtcaa ttttaaagat attgatactg gtaatggtgg tttcaacacc 60
ttagacttta gtggtgttac aaacaaggtc aatatcaaca aactcattac agcttccact 120
aatgtggccg ttaaaaactt caacattaat gaattgttgg ttaaaaccaa tgggataagt 180
gtgggggaat acactaattt tagcgaagat ataggcagtc aatcgcgcat caataccgtg 240
cgtttagaaa ctggcaccag gtcaatctat tctgggggtg ttaagttt 288

<210> 272
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

<400> 272
gcgagcgctc atacggtcaa ttttaaagat attgatactg gtaatggtgg tttcaacacc 60
ttagatttta gtggtgttac aaacaaggtc aatatcaaca agctcattac agcttccact 120
aatgtggcca ttaaaaactt caacattaat gaattgttgg ttaaaaccaa tgggataagt 180
gtgggggaat acactaattt tagcgaagat ataggcaatc aatcgcgcat caataccgtg 240
cgtttagaaa ctggcactag gtcaatctat tctgggggtg ttaagttt 288

<210> 273
<211> 288
<212> DNA
<213> Artificial Sequence

<220>
<223> Helicobacter pylori vacA nucleic acid sequence

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